

## Claims

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent is:

1 1. A method, for use in a virus-free certificate cache, of caching one or multiple virus-free certificates, each virus-free certificate certifying that a file is virus-free, said method comprising the steps of:

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5 • receiving a virus-free certificate request for a file;

6 • identifying the file in a cache table, said cache table comprising for each

7 identified file one or a plurality of virus-free certificates;

8 • selecting in the cache table one virus-free certificate for the identified file, using

9 one or a plurality of anti-virus criteria;

10 • retrieving from the cache table said selected virus-free certificate;

11 • sending back in response to the virus-free certificate request the retrieved virus-free certificate .

1 2. The method according to claim 1 wherein the virus-free certificate request comprises:

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3 • a list of one or a plurality of anti-virus programs to execute on the file to

4 determine whether the file is virus-free or not.

1 3. The method according to claim 1 wherein the virus-free certificate request further

2 comprises:

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4 • an identification of the file.

1     4. The method according to the claim 1 wherein the virus-free certificate request further  
2     comprises:

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4     •     an identification of a virus-free certificate authority, said virus-free certificate  
5     authority having authority to generate virus-free certificates.

1     5. The method according to claim 1 wherein the virus-free certificate comprises:

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3     •     the list of the one or plurality of anti-virus programs that have been  
4     executed on the file.

1     6. The method according to claim 1 wherein the virus-free certificate further comprises:

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3     •     a virus-free certificate authority identification.

1     7. The method according to claim 1 wherein the step of selecting in the cache table one  
2     virus-free certificate for the identified file using one or a plurality of anti-virus criteria  
3     comprises the further steps of:

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5     •     comparing the list of one or a plurality of anti-virus programs comprised in each  
6     virus-free certificate associated with the identified file in the cache table with the list of  
7     one of a plurality of anti-virus programs comprised in the received virus-free /certificate  
8     request;

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10    and where the list of one of a plurality of anti-virus programs comprised in a virus-free  
11    certificate associated with the identified file includes the list of one or a plurality of anti-  
12    virus programs comprised in the received virus-free certificate request:

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14    •     selecting said virus-free certificate.

1       8. The method according to claim 1 wherein the step of selecting in the cache table one  
2       virus-free certificate for the identified file using one or a plurality anti-virus criteria  
3       comprises the further steps of:

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5       •       comparing the virus-free certificate authority identification comprised in each  
6       virus-free certificate associated with the identified file in the cache table, and the virus-  
7       free certificate authority identification       comprised in the received virus-free  
8       certificate request:

9       and where the virus-free certificate authority identification comprised in a virus-free  
10      certificate associated with the identified file is identical to the virus-free certificate  
11      authority identification comprised in the received virus-free certificate request:

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13       •       selecting said virus-free certificate.

1       9. The method according to claim 1 wherein the step of identifying the file in a cache  
2       table comprises the further steps of:

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4       If the file is not identified in said cache table:

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6       •       forwarding the received virus-free certificate request to another virus-free  
7       certificate cache;  
8       •       receiving a virus-free certificate in response to said forwarded virus-free  
9       certificate request;  
10      •       sending back in response to the received virus-free certificate request, said  
11      received virus-free certificate.

1       10. The method according to claim 1 comprising the further step of:

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3     • receiving a request to update the cache table, said request comprising a virus-  
4       free certificate;  
5     • storing said virus-free certificate in the cache table.

1     11. The method according to claim 10 wherein the step of receiving a request to update  
2       the cache table comprises the further step of:

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4     • forwarding said request to another virus-free certificate cache.

1     12. The method according to claim 1 comprising the further step of:

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3     • discarding from the cache table the virus-free certificate which are no more  
4       valid.

1     13. The method according to claim 1 comprising the further steps of:

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3     • selecting in the cache table one or a plurality of virus-free certificates, using an  
4       information indicating for each virus-free certificate the date of the latest virus-  
5       free certificate request which has been received for said virus-free certificate;  
6     • discarding from the cache table said one or plurality of selected virus-free  
7       certificate.

1     14. The method according to claim 1 comprising the further steps of:

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3     • selecting in the cache table one or a plurality of virus-free certificate, using an  
4       information indicating for each virus-free certificate the number of virus-free  
5       certificate request which have been received for said virus-free certificate;  
6     • discarding from the cache table said one or a plurality of selected virus-free  
7       certificate Comprises.

1 15. The method according to claim 1 wherein the generated virus-free certificate  
2 comprises:

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4 • a file signature for certifying that the file is declared a virus-free by the selected  
5 virus-free certificate authority.

1 16. The method according to claim 1 wherein the virus-free-certificate further comprises:

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3 • a file identification;  
4 • a public key for decrypting the file signature;  
5 • a certificate signature for authenticating the virus-free certificate;  
6 • an indication of the virus-free certificate validity.

1 17. A system for caching one or more virus-free certificates within a LAN/WAN  
2 network, each virus-free certificate certifying that a file to be downloaded to a client is  
3 virus-free, said system comprising:  
4 a mechanism for receiving a request for a virus-free certificate associated with a file to be  
5 downloaded to said client;  
6 cache table device for storing one or more virus-free certificates for files, said cache table  
7 device including look-up mechanism for identifying one or more virus-free certificates  
8 associated with a requested file in a cache table; said look-up mechanism enabling  
9 selection of one virus-free certificate for the identified file using one or a plurality of anti-  
10 virus criteria; and,  
11 mechanism for retrieving from a cache table said selected virus-free certificate; and, in  
12 response to said request, returning a retrieved virus-free certificate with said file.

1       18. A program storage device readable by a machine, tangibly embodying a program of  
2       instructions executable by the machine to perform method steps for caching one or more  
3       virus-free certificates within a LAN/WAN network, each virus-free certificate certifying  
4       that a file to be downloaded to a client is virus-free, said method steps comprising:  
5           a) receiving a virus-free certificate request for a file;  
6           b) identifying the file in a cache table, said cache table comprising for each  
7           identified file one or plurality of virus-free certificates;  
8           c) selecting in the cache table one virus-free certificate for the identified file  
9           using one or a plurality of anti virus criteria; and,  
10          d) retrieving from the cache table said selected virus-free certificate and  
11           returning a retrieved virus-free certificate with said file.

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